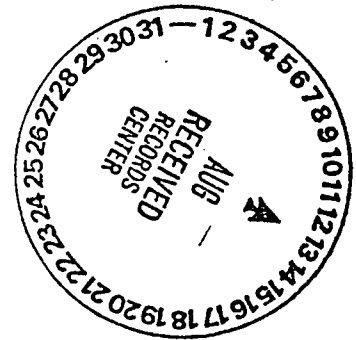


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ACTION DESCRIPTION MEMORANDUM
FOR
FUEL OIL TANK CLOSURE

Rockwell International
Aerospace Operations
Rocky Flats Plant

Operating Contractor



U.S. Department of Energy
Rocky Flats Area Office

DRAFT
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ADMIN RECORD

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1.0 PROPOSED FUEL TANK CLOSURE

The U. S. Department of Energy (DOE) is undertaking a program to implement the closure of Building 443 No. 4 fuel oil tank (No. 4 tank). Since 1984, this tank has been used to store waste water, oil and solvents from Building 443 activities. These wastes qualify as hazardous; therefore, the No. 4 tank is regulated under the Resource Conservation and Recovery Act (RCRA). The No. 4 tank is an interim status RCRA unit.

A Closure Plan has been prepared for the DOE Rocky Flats Plant, Building 443 No. 4 fuel oil tank (Rockwell International, 1988). This closure plan was prepared pursuant to the requirements of 6 CCR 1007-3, Section 264 Subpart F. The activities in the Closure Plan related to remedial requirements for tank, line and soil include:

- o Hazardous waste identification, characterization, and disposal;
- o Remediation of surrounding facilities and soils;
- o Tank and line excavation, removal and disposal; and
- o Placement of clean fill in excavated areas.

For reasons unrelated to hazardous waste storage in the No. 4 tank, three additional tanks immediately east of Building 443 are also scheduled for removal.

Proposed closure and related remedial activities will be conducted in accordance with all applicable regulations of the National Environmental Policy Act (NEPA) (DOE, 1981, 1988).

1.1 OBJECTIVES OF FUEL OIL TANK CLOSURE

Closure of the fuel oil tank area will meet the performance standard of 6 CCR 1007-3, Section 265.111. The objectives of these standards require that closure be accomplished in a manner that:

- o Minimizes the need for further maintenance; and
- o Controls, minimizes or eliminates, to the extent necessary to protect human health and environment, post-closure escape of hazardous waste constituents, leachate, contaminated rainfall, or waste decomposition products to the ground or surface waters or to the atmosphere.

The proposed closure activities for the fuel oil tanks will also comply with long-term monitoring and groundwater corrective action requirements of 6 CCR 1007-3, Section 264 Subpart F. The actions proposed for closure include a variety of techniques that are intended to provide for contaminant source removal and/or stabilization. The proposed actions are based on meeting closure performance standards for the removal of tanks, tank lines, and in-place soils beneath the tanks. The standards are based on transuranic radioactivity standards and definition of hazardous waste intended to provide long term protection to exposed persons in a "critical segment of the general population."

1.2 BACKGROUND

The Building 443 No. 4 tank has been identified as a priority hazardous waste site for closure and remedial action. This fuel oil tank is one of four tanks that historically supplied #6 fuel oil to the Building 443 steam plant from 1967 through 1984. After 1984, the No. 4 tank was used to store water and oil wastes from recently installed air compressors in Building 443. Used solvents

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from Building 443 were also stored in the No. 4 tank. These solvents included the volatile organic compounds 1,1,1-trichloroethane (TCA); trichloroethylene (TCE); methylene chloride; and trichlorofluoromethane. In 1986, an apparent release from No. 4 tank was observed. Contents of the tank were subsequently removed. Leaks from transfer lines to the No. 4 tank have also been documented. Incomplete excavation and disposal of contaminated soil surrounding these leaks has occurred, as described in Section 1.2.7 of the Closure Plan (Rockwell International, 1988).

1.3 NEED FOR THE ACTION

The No. 4 fuel oil tank is no longer in use at the Rocky Flats Plant. The tank stored hazardous waste, and contamination of surrounding soils has occurred during its use. It is therefore required that the tank be closed under the provisions of RCRA.

1.4 DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES

The activities associated with closure and removal of the No. 4 tank and soil and groundwater remedial activities, as described in Figures 7 and 8 of the Closure Plan are presented below. These activities are described in detail in the Closure Plan.

1.4.1 Closure Plan Activities for Soils

- o Sample and characterize tank contents, determine amount of residual wastes;
- o Remove and dispose of residual wastes at a facility approved for disposal of petroleum contaminated soils;
- o Determine extent of soil contamination (drilling and soil sampling);

- o Excavate, remove and dispose of contaminated soil, tank and lines at an approved offsite disposal facility. Approximately 2800 cubic yards of soil are anticipated to be removed from the area of the four storage tanks;
- o Amend Closure Plan to fully remediate soils under nearby buildings as necessary. If soil contamination is extensive and removal of soils could adversely affect structures in the area, then alternative closure methods will be evaluated and a revised closure plan will be submitted; and
- o Post closure care and maintenance for soils.

1.4.2 Closure Plan Activities for Groundwater

6 CCR 1007-3, Section 264 Subpart F requires groundwater monitoring and, if necessary, corrective action in the case of tank system closure by removal if residual contamination remains. This monitoring will be in compliance with all Colorado Department of Health (CDH) and Environmental Protection Agency (EPA) regulations. Groundwater monitoring for tank closure activities will take place as follows:

- o Evaluate groundwater (sampling and analyses);
- o If contamination is present above the groundwater protection standard, develop and implement groundwater monitoring system and, if necessary, corrective action; and
- o Post-closure care and maintenance for groundwater.

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1.4.3 Alternative Actions

The proposed action for closure of the fuel oil tanks is based on the results of the site characterization activities. Studies are ongoing to evaluate alternate actions that would prove to be economical and protective of human health and the environment. Alternatives include:

- o In-situ treatment of contaminated soils;
- o Onsite treatment and/or disposal of removed contaminated materials;
- o In-situ groundwater treatment; and
- o Other currently unidentified technologies.

Should the No Action alternative be implemented, a variety of environmental consequences could result. These might include:

- o Local long term impact to water quality;
- o Long term impact to offsite water quality;
- o Continued contaminant migration as a result of infiltration and inflow of groundwater; and
- o Potential impacts of natural phenomena such as flooding, earthquakes, and tornadoes.

2.0 LOCATION OF THE ACTION

The Rocky Flats Plant is located in northern Jefferson County approximately 16 miles northwest of downtown Denver, Colorado. The

immediate area around Rocky Flats is primarily agricultural or undeveloped land. Population centers within 12 miles of the facility include the cities of Boulder, Broomfield, Golden, and Arvada. A detailed description of the local demographics and environment is presented in the Rocky Flats Plant Site Final Environmental Impact Statement (DOE, 1980).

The four fuel oil tanks are located approximately 25 feet East of Building 443, in the west-central section of the controlled area of the Rocky Flats Plant. Each tank is oriented longitudinally east to west. The tanks are in a line running north to south. The No. 4 tank is the southernmost tank (Rockwell International, 1988).

The tanks and immediate vicinity represent the primary location for any closure activities undertaken. Activities associated with closure of the tanks will occur totally within the Plant boundaries (except for offsite shipment of wastes) and will be controlled by appropriate facility procedures in compliance with appropriate environmental regulations.

3.0 ENVIRONMENTAL ISSUES

Closure and removal of Tanks No. 1 through No. 4 will involve a variety of activities including sampling, characterizing and ultimately eliminating sources of contamination. The actions proposed for closure are, in fact, mitigative measures to insure that human health and the environment are protected.

The activities to be undertaken for closure will, in and of themselves, cause short-term environmental impacts. Depending on specific actions taken, impacts may be associated with onsite waste management activities related to contaminated material and sources, and offsite transportation and disposal of contaminated material and sources. The effects of these activities are summarized below.

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3.1 ENVIRONMENTAL EFFECTS

3.1.1 Air Quality

Air quality could be temporarily impacted as a result of the closure actions. Increased airborne particulates may result from the construction operations because of potentially dusty operations due to soil excavation and truck hauling. The excavation of tanks, tank contents, lines, and soil could result in the release of volatiles to the atmosphere.

The environmental impacts of volatilization of constituents to the atmosphere is considered to be negligible. Suspension of particulates into the atmosphere will be controlled to the extent necessary through dust suppression techniques, will be monitored through ambient air monitoring to insure adequate control measures are being taken, and will result in negligible environmental effects.

3.1.2 Water Quality

The closure activities will have a net beneficial effect on groundwater quality in that potential sources of contamination will be removed. It is unlikely that groundwater quality would be further degraded during the closure activities.

Surface water quality could be temporarily impacted during closure activities. Heavy precipitation during construction could result in increased runoff of sediments and washing of newly exposed soil. Proper surface drainage control and the temporary installation of containment structures will minimize surface erosion and transport to North Walnut Creek.

3.1.3 Soils

Negligible impacts to the soils onsite will occur because of regrading and redistribution of previously disturbed, stockpiled soil. Low to moderate impacts will result if soil removal below the tanks is required. Erosion of the soil, prior to grading and placement of a concrete pad, is expected to be low.

3.1.4 Cultural Resources

Closure activities will have no impact on archaeological and/or historic resources. The State Office of Archaeology and Historic Preservation has stated that the areas within the 384-acre security-fenced zone are so highly disturbed that little cultural resource information would be available. A class II survey was conducted during the summer of 1988 on the remainder of the 6200-acre plant site, and no unique sites or sites considered eligible for nomination to the National Register of Historic Places were discovered (Burney and Associates, 1988).

3.1.5 Biological Resources

This closure activity will have negligible impacts on vegetation as the area is filled, graded, and prepared for concrete pad placement and runoff controls. There is currently no vegetation around the project area.

The U.S. Fish and Wildlife Service has listed two endangered species as potentially existing in the Rocky Flats area. These species are the black-footed ferret and the bald eagle. This project will not affect either species.

3.1.6 Land Use

Closure will require a small amount of additional land to install the concrete pad over the tank excavation area, resulting in a low impact to vegetation and soils adjacent to the site. The activities are within existing Plant boundaries and will not impact agricultural or recreation areas. Closure will tend to enhance the local environment and limit potential adverse environmental effects from contaminant migration offsite to agricultural areas or population centers.

3.1.7 Wetlands

The fuel oil tank site does not occupy wetland habitat; therefore, closure activities will have no effect on wetland resources.

3.2 HEALTH AND SAFETY

Fuel oil tank closure actions will conform to all applicable health, safety, and environmental requirements. The Plant maintains an on-going environmental surveillance program as required by DOE orders. Monitoring and sampling locations will be augmented to ensure compliance with environmental requirements for the remedial actions taken. Major environmental issues include:

- 1) Occupational Exposure - Buried waste site improvements and/or contaminated waste treatment will result in occupational exposures to toxic substances and possibly to trace amounts of radioactive materials. Appropriate field operations and waste-handling procedures will be implemented to minimize this exposure. The remedial actions undertaken may generate a waste that has hazardous constituents. These wastes contain both oils and solvents and are

typically commercially disposed offsite. This waste is not expected to contain radioactive constituents and therefore is not considered a mixed waste.

- 2) Nonoccupational Exposure - Implementing actions will be directed towards preventing potential exposure to the public from contaminants which have the potential to migrate beyond site boundaries. Construction activities will be managed to limit airborne contaminants resulting from excavation work and any waste processing effluents will be controlled in accordance with existing facility policies and environmental requirements.
- 3) Onsite Transportation - Any onsite transportation of waste will be by truck. Impacts other than those normally incident to transportation (e.g., pollution, potential for injuries or fatalities), include the potential for occupational exposure to toxic substances. Onsite transportation activities will be managed to minimize attendant occupational risks. There is essentially no hazard to the public health since the subject transportation activities will occur within Plant boundaries.
- 4) Offsite Transportation - Any offsite transportation and waste disposal will provide an incremental contribution to health effects which are normally incident to transportation and will affect the general public. These risks include the effects associated with pollutants and potential risks associated with transportation-related accidents. It is too early in the tank closure program to project whether or not and to the extent that

offsite waste transportation alternatives may be implemented. However, for purposes of comparison, an estimated 500 billion packages are shipped by all modes of transportation each year, of which 100 million involve hazardous commodities. Any offsite shipments of waste from Building 443 tank excavations will have negligible impact relative to the large number of annual shipments of hazardous waste.

- 5) Accidents and Natural Phenomena - The potential exists for occupational and nonoccupational impacts to occur from equipment failures and operator errors as well as from natural phenomena (e.g., tornado, high winds, heavy rainfall). Such events are expected to have a very low frequency of occurrence.
- 6) Long-Term Environmental Quality - There are several individual issues associated with contamination treatment and confinement actions. Associated with both closure categories is the establishment of appropriate surveillance and reporting practices. This includes monitoring well placement, frequency and method of sampling, and duration of sampling. Also of issue are potential impacts from intrusive actions by burrowing animals and vegetation. Waste management operations will perform periodic inspections and repairs to mitigate such occurrences. Confinement alternatives raise the issue of loss of institutional control and potential impacts from subsequent intrusion by man.

Groundwater at the facility is monitored quarterly by monitoring wells in order to protect human health and the environment from

contamination originating from No. 4 tank. The monitoring and security measures (fencing, security patrols, and camera surveillance) are designed to protect human health from the threats posed by the Plant and its operations as a whole, as well as from threats posed by the fuel oil tanks.

REFERENCES

Burney and Associates. 1988. Cultural Resources Inventory, Rocky Flats Plant Site. Draft Report.

Rockwell International. 1988. Closure Plan Building 443 No. 4 Fuel Oil Tank. U.S. Department of Energy, Rocky Flats Plant.

U.S. Department of Energy. 1980. Rocky Flats Plant Site, Final Environmental Impact Statement, DOE/EIS-0065.

_____. 1981. Environmental Compliance Guide. U.S. Department of Energy, Washington, D.C.

_____. 1988. NEPA Compliance Regulations. 10 CFR Part 1021. Office of Federal Register, National Archives and Records Administration. Washington, D. C.